

ABSTRACT

The present invention relates to methods and apparatus for plating a conductive material on a workpiece surface in a highly desirable manner. Using a workpiece-surface-influencing device, such as a mask or sweeper, that preferentially contacts the top surface of the workpiece, relative movement between the workpiece and the workpiece-surface-influencing device is established so that an additive in the electrolyte solution disposed on the workpiece and which is adsorbed onto the top surface is removed or otherwise its amount or concentration changed with respect to the additive on the cavity surface of the workpiece. Plating of the conductive material can place prior to, during and after usage of the workpiece-surface-influencing device, particularly after the workpiece surface influencing device no longer contacts any portion of the top surface of the workpiece, to achieve desirable semiconductor structures.